REMARKS

Claims 1-21 were pending and presented for examination in this application. In an Office Action dated August 9, 2007, claims 1-21 were rejected.

Claims 1, 8, 15 and 21 are amended. Claims 22-30 are added. Claims 1-30 are pending after these amendments. No new matter is being added.

The Examiner rejected claims 1, 4, 7, 8, 14, 15, and 21 under 35 USC § 101 as directed to non-statutory subject matter. Claim 1 is amended to recite that data is stored on a computer-readable storage medium. Claims 8, 15 and 21 are similarly amended to include outputting to or storing data on a computer-readable storage medium. As the claims recite statutory subject matter under 35 USC § 101, the Examiner is asked to withdraw the rejection.

The Examiner rejected claims 1-21 under 35 USC § 102(b) as anticipated by Nakayama *et al* (6,711,295).

As amended, claim 1 recites:

> A computer-implemented method for compressing data, the method comprising:
> applying a dynamic prediction function to the data by using dynamically predicted coefficient values associated with the data to yield first compressed data;
> applying a Golomb coding function to the first compressed data to yield second compressed data; and
> outputting the compressed data to a storage device.

Claims 8, 15 and 21 recite similar language. The claimed invention relates to a lossless encoder for compressing audio and image data. The claimed invention allows a lossless encoding system to perform two-level compression of the input data, first by a dynamic predictor, followed by an adaptive Golomb encoder. More specifically, the dynamic predictor first compresses the input data by using dynamically predicted coefficient values associated with the input data, resulting in a first compressed data. As such, the predicted coefficient values are re-evaluated on the fly, enabling additional compression of the input data because of more accurate predictions. The adaptive Golomb encoder achieves further compression on the first compressed data.

Nakayama does not disclose or teach yielding first compressed data by using dynamically predicted coefficient values associated with input data. Nakayama discloses an encoding method whose objective is to perform Golomb-Rice coding efficiently. See Nakayama, Abstract. In Nakayama's normal coding mode, a prediction converting circuit 102 and the Golomb-Rice coding circuit 104 perform an encoding process. See Nakayama, column 2, line 66-column 3, lines 1-3. In Nakayama, for an input pixel, i.e., the object pixel with the pixel value x, the prediction value P is generated based on the peripheral pixels a, b, and c of x. See Nakayama, column 5, lines 41:50. The prediction value P in Nakayama is further corrected by a correction value by a linear error feedback circuit 402. However, the peripheral pixels a, b, and c of x in Nakayama are the limited neighboring pixels of x, and Nakayama does not disclose that they are dynamically predicted. See Nakayama, Fig. 2, and column 3, lines 41-59. In contrast, the

claimed invention generates the prediction value by modifying a number of previously encoded coefficient values associated with the current data on the fly, i.e., dynamically, and further dynamically adjusts the prediction value by a non-linear feedback mechanism. The number of previously encoded coefficient values, M, is a configurable encoding parameter of design choice. Then, the dynamic predictor generates the first compressed data by extracting the dynamically predicted and modified prediction value from the data currently being processed. See, e.g., specification, ¶¶ [0030]-[0034], and Fig. 3. As such, Nakayama does not disclose "applying a dynamic prediction function to the data by using dynamically predicted coefficient values associated with the data to yield first compressed data," as claimed.

The Examiner rejected claims 3-6, 10-13, 17-20 under 35 USC §103(a) as anticipated by Nakayama.

The Examiner asserts that Nakayama does not disclose color transformation from RGB domain to YUV domain as claimed, but clearly suggests such color transformation. The embodiments of Nakayama are described by employing an encoding example for a monochrome image signal, and indeed, Nakayama discloses applying the method to a multi-valued color image of RGB color components. However, Nakayama does not disclose transforming the color components of the input image from RGB domain to YUV domain. On the contrary, Nakayama discloses encoding GRB color images using the Golomb-Rice encoder explicitly in the RGB domain. See Nakayama, column 3, lines 11-18. The color transformation from RGB domain to

YUV domain enables the claimed invention to remove redundancy between color channels of the input data. As such, Nakayama does not disclose or suggest the color transformation as claimed.

Therefore, claims 4-5, 11-12, and 18-19 are patentably distinguishable over the cited reference.

Furthermore, the Examiner admits that Nakayama does not disclose using audio data as claimed, but states that it would have been obvious to one of ordinary skill in the art to apply the Nakayama's teaching to audio data by substitute image data with audio data. Audio data and image data each has its distinct characteristics especially in the context of audio compression and image compression. For example, transforming a left and right channel of audio input into a U and V domain as claimed allows the claimed lossless encoder to improve the overall compression operation while the color transformation of image data from the RGB domain to the YUV domain removes redundancy between color channels. As such, the substitution of image data with audio data is neither appropriate nor necessitates the obviousness to one of ordinary skill in the art.

Therefore, claims 3, 10 and 17 are patentably distinguishable over the cited reference.

For at least these reasons claims 1, 8, 15 and 21 are patentably distinguishable over the cited reference. Therefore, Applicants respectfully request that Examiner withdraw the rejection.

The dependent claims are also patentable over Nakayama, both because each depends from patentable independent claims, respectively, and because each also recites its own

patentable features. For example, newly added dependent claim 23 recites the non-linear feedback featured employed by the dynamic predictor to modify the dynamically predicted coefficient values associated with the input data.

Applicants respectfully request the allowance of the application. The Examiner is invited to contact the undersigned by telephone in order to advance the prosecution of this case.

Respectfully submitted,
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Dated: February 11, 2008

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